

E-filed: 1/27/2009

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

HYNIX SEMICONDUCTOR INC., HYNIX
SEMICONDUCTOR AMERICA INC.,
HYNIX SEMICONDUCTOR U.K. LTD., and
HYNIX SEMICONDUCTOR
DEUTSCHLAND GmbH,

Plaintiffs,

v.

RAMBUS INC.,

Defendant.

No. C-00-20905 RMW

ORDER DENYING HYNIX'S MOTION FOR
JUDGMENT AS A MATTER OF LAW OR
FOR A NEW TRIAL REGARDING THE
WRITTEN DESCRIPTION REQUIREMENT

[Re Docket No. 2067]

Following a trial on infringement and validity, the jury returned a verdict that Hynix¹ infringed certain Rambus patents and that Hynix had not proven that those patents were invalid. Docket No. 2054 (Apr. 26, 2006). The court deferred ruling on post-trial motions from the patent trial until a jury determined Hynix's antitrust and fraud claims. On March 26, 2008, a different jury found that Rambus did not monopolize various technology markets or commit fraud. Docket No. 3613. The court has denied Hynix's motion for a new trial with respect to those claims. *Hynix Semiconductor Inc. v. Rambus Inc.*, 2008 WL 2951341 (N.D. Cal. Jul. 24, 2008).

¹ The court collectively refers to the four Hynix entities as "Hynix."

The court now returns to the post-trial motions from the patent case. This order addresses Hynix's motion for judgment as a matter of law or for a new trial on the basis that Rambus's asserted claims do not meet the written description requirement of 35 U.S.C. § 112, ¶ 1. Hynix argues that the record developed at trial entitles it to judgment as a matter of law. In the alternative, Hynix moves for a new trial, assigning error to the court's instruction to the jury regarding the written description requirement and two evidentiary rulings. Hynix also argues that the jury's verdict went against the clear weight of the evidence. Rambus opposes the motion. The court has reviewed the papers and considered the arguments of counsel. For the reasons set forth below, the court denies the motion.

I. LEGAL STANDARDS

A. Judgment as a Matter of Law

Under Fed. R. Civ. P. 50(a) judgment as a matter of law is warranted where "a party has been fully heard on an issue and there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue." *Reeves v. Sanderson Plumbing Products, Inc.*, 530 U.S. 133, 149 (2000). Judgment as a matter of law may be granted where "the evidence, construed in the light most favorable to the nonmoving party, permits only one reasonable conclusion, and that conclusion is contrary to that of the jury." *White v. Ford Motor Co.*, 312 F.3d 998, 1010 (9th Cir. 2002). A court reviews all the evidence in the record, but it disregards evidence favorable to the moving party that the jury is not required to believe:

[I]n entertaining a motion for judgment as a matter of law, the court should review all of the evidence in the record. . . . [T]he court must draw all reasonable inferences in favor of the nonmoving party, and it may not make credibility determinations or weigh the evidence. Credibility determinations, the weighing of the evidence, and the drawing of legitimate inferences from the facts are jury functions, not those of a judge. Thus, although the court should review the record as a whole, it must disregard all evidence favorable to the moving party that the jury is not required to believe. That is, the court should give credence to the evidence favoring the nonmovant as well as that evidence supporting the moving party that is uncontradicted and unimpeached, at least to the extent that that evidence comes from disinterested witnesses.

Reeves, 530 U.S. at 150 (quotations and citations omitted).

In other words, the court may only grant Hynix's motion for judgment as a matter of law if

"(1) the movant has established its case by evidence that the jury would not be at liberty to disbelieve and (2) the only reasonable conclusion is in the movant's favor." *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059, 1065 (Fed. Cir. 1998) (citation and quotations omitted).

B. Motion for a New Trial

After a jury has returned its verdict, the court may grant a new trial "for any reason for which a new trial has heretofore been granted in an action at law in federal court." Fed. R. Civ. P. 59(a)(1)(A). Hynix's motion for a new trial rests on a number of grounds, including that the verdict was against the weight of the evidence. Such a motion may be granted if "the verdict is contrary to the clear weight of the evidence[.]" *United States v. 4.0 Acres of Land*, 175 F.3d 1133, 1139 (9th Cir. 1999). "[A] district court may not grant or deny a new trial merely because it would have arrived at a different verdict." *Id.* While there is no formulaic test for determining whether a verdict is contrary to the clear weight of the evidence, "[i]f, having given full respect to the jury's findings, the judge on the entire evidence is left with the definite and firm conviction that a mistake has been committed, it is to be expected that he will grant a new trial." *Landes Constr. Co., Inc. v. Royal Bank of Canada*, 833 F.2d 1365, 1372 (1987). In forming that conviction, the court may consider the credibility of witnesses and persuasiveness of the evidence. *Id.*

Hynix also argues that a new trial is justified based on an erroneous jury instruction and the court's failure to exclude allegedly improper testimony. If prejudicial, these grounds also could justify a new trial. *See* 11 WRIGHT, MILLER & KANE, FEDERAL PRACTICE AND PROCEDURE § 2805, at 55 (2d ed. 1995) (noting that "any error of law, if prejudicial, is a good ground for a new trial" and listing other common reasons for holding a new trial). In considering whether Hynix was prejudiced, the court examines the cumulative weight of any errors. *Jerden v. Amstutz*, 430 F.3d 1231, 1240-41 (9th Cir. 2005).

II. THE JURY INSTRUCTION ON WRITTEN DESCRIPTION

The court instructed the jury regarding the written description requirement as follows:

A patent claim is invalid if the patent does not contain a written description of each and every requirement of that claim. As I have previously explained to you, to obtain a patent one must file an application with the Patent and Trademark Office. The

1 application includes what is called a "specification," which must contain a written
2 description of the claimed invention telling, among other things, what the invention
3 is and how it works. That "specification" may then be carried forward into later
4 patent applications that are based on the original application. The claims in those
5 later patent applications may be amended claims from the original application or new
6 claims and those amended or new claims may narrow or broaden the scope of the
7 originally filed claims. The purpose of the written description requirement is to make
8 sure that the inventor had in mind, that is, had invented at the time the original patent
9 application was filed, the full scope of the invention as finally claimed in a later
10 patent which is based upon the original specification.

11 In this case, the original patent application was filed April 18, 1990. *Therefore, the*
12 *question for you is whether that original patent application describes each*
13 *requirement of the Asserted Claims*, specifically each requirement of claim 34 of
14 the '105 patent, claims 24 and 33 of the '918 patent, claim 33 of the '120 patent,
15 claims 32 and 36 of the '020 patent, claims 9, 28 and 40 of the '916 patent and claim
16 16 of the '863 patent.

17 The written description requirement is not satisfied if a person of ordinary skill in the
18 field reading the original specification would not recognize that the specification
19 describes the invention as finally claimed in the amended or new claims. Although
20 the original patent application must describe each and every requirement of a patent
21 claim, it need not use the exact words found in the claim or the specific words "the
22 invention is." Further, a requirement in a claim need not have been specifically
23 disclosed in the original patent application if persons of ordinary skill in the field
24 reading that application would understand the missing requirement must necessarily
25 be present.

26 The written description test is an objective test: does the patent application as
27 originally filed support the claim in question? In this case, you must decide whether
28 the original patent application filed on April 18, 1990 would have disclosed to one
of ordinary skill in the art each and every requirement of the Asserted Claims. Since
the specification for each of the Patents-in-Suit is substantively the same as the
specification filed on April 18, 1990, you can decide the written description question
by examining the patent's specification and determining whether it describes each
and every requirement of the patent claim at issue. If you find that Hynix has proved
that any of the Asserted Claims is not supported by the original patent application
filed April 18, 1990, then you must find that the written description for that claim has
not been met.

21 Docket No. 2050, 17-18 (Apr. 20, 2006).² The court's instruction accords with various model
22 instructions regarding the written description requirement. *See, e.g.,* Model Patent Jury Instructions

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27 ² Each juror received a copy of all of the jury instructions and a copy of the special verdict
28 form to assist them in their deliberations. *See* Trial Tr. 3182:24-3183:8 (Apr. 12, 2006).

1 for the N.D. Cal. 4.2a (Nov. 29, 2007);³ AIPLA's Model Patent Jury Instructions 9 (2008);⁴ Fed. Cir.
2 Bar Ass'n Draft Model Patent Jury Instructions 5.2 (Dec. 5, 2008).⁵

3 Nonetheless, Hynix objected to the emphasized portion of the instruction. Trial Tr. 2949:20-
4 2952:5 (Apr. 11, 2006). To Hynix, "[d]isclosure in the specification of the requirements of the
5 claims is a necessary, but not sufficient condition for compliance with the written description
6 requirement." Mot. 20:11-12. The second condition envisioned and proposed by Hynix is that "[a]
7 broad claim is invalid where the entirety of the specification indicates that the invention is of a much
8 narrower scope than what is claimed." *Id.* 2951:17-21.

9 Hynix draws this language from *Cooper Cameron Corp. v. Kvaerner Oilfield Products, Inc.*
10 291 F.3d 1317, 1323 (Fed. Cir. 2002). But in the same opinion, the Federal Circuit remarked that
11 "[u]se of particular language explaining a decision does not necessarily create a new legal test." *Id.*
12 This guidance applies here. The language from *Cooper Cameron* requested by Hynix did not create
13 a new test for determining whether the written description requirement is met. It used the language
14 merely to explain the court's prior holding in *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473
15 (Fed. Cir. 1998), and to distinguish it. *Id.* And the distinction reveals the correctness of the
16 instruction given to the jury here. The Federal Circuit explained that in *Gentry Gallery* "there was
17 no description or support whatever in the . . . patent [for the claimed invention]." *Id.* On the other
18 hand, "Cooper's claims to the location of the workover port in the '119 patent are supported by the
19 figures showing that the workover port is in fact above the tubing hanger and below the BOP bore."
20 *Id.* The figure in Cooper's patent demonstrated that the inventor possessed the claimed invention,
21 while in *Gentry Gallery*, the specification's lack of any support for the claimed invention proved that
22 the inventor did *not* possess the claimed invention. Hence, the test applied in *Copper Cameron* as to

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24 ³ [http://www.cand.uscourts.gov/CAND/FAQ.nsf/60126b66e42d004888256d4e007bce29/4b43c2137e17e03a88257393007bac13/\\$FILE/NDModel.nov07.pdf](http://www.cand.uscourts.gov/CAND/FAQ.nsf/60126b66e42d004888256d4e007bce29/4b43c2137e17e03a88257393007bac13/$FILE/NDModel.nov07.pdf)

25 ⁴ http://www.aipla.org/Content/ContentGroups/Publications1/Publications_available_for_viewing1/2008_03_27_AIPLA_Model_Jury_Instructions.pdf

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27 ⁵ <http://memberconnections.com/olc/filelib/LVFC/cpages/9008/Library/National%20Jury%20Instructions.pdf>

1 whether the patentee met the written description requirement was simply whether the specification
2 disclosed enough "to convince a person of skill in the art that the inventor possessed the invention."
3 *LizardTech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005). Disclosure
4 of each limitation of the claimed invention satisfies this test.

5 To be sure, the challenged jury instruction does not make explicit every nuance of the written
6 description doctrine. For example, it is a general rule that "[a] claim will not be invalidated on
7 section 112 grounds simply because the embodiments of the specification do not contain examples
8 explicitly covering the full scope of the claim language." *Id.* This leniency arises from the
9 assumption that patents are read by persons of ordinary skill in the art, and that these persons do not
10 need well-known background material recited over and over. *Id.* But "a patentee cannot always
11 satisfy the requirements of section 112, in supporting expansive claim language, merely by clearly
12 describing one embodiment of the thing claimed." *Id.* at 1346. Where an art is unpredictable, for
13 example, a person of ordinary skill might recognize from the specification that the inventor
14 possessed only a single species of a thing, and not the entire genus. *See id.* at 1346 (explaining
15 cases); *Rambus Inc. v. Hynix Semiconductor, Inc.*, 569 F. Supp. 2d 946, 994-96 (N.D. Cal. 2008).
16 The court's instruction can be read to encompass this notion, but it does not call attention to the
17 issues raised by using a species-disclosure to support a genus-claim. Nevertheless, any error in
18 omitting this wrinkle in written description law did not prejudice Hynix. Hynix did not propose a
19 jury instruction along these lines; instead, Hynix proposed an instruction similar to the court's but
20 with an improper emphasis on the inventors' mental state. *See* Docket No. 1998 at 18 (Apr. 10,
21 2006).

22 Given that the court's instruction on written description accurately reflected the law and that
23 Hynix's proposed instruction was flawed, the court finds no error in the instruction and denies the
24 motion for a new trial on this ground.

25 III. THE HIGHLIGHTED SPECIFICATIONS

26 Hynix also seeks a new trial based on the alleged prejudice Hynix suffered when inventor
27 Dr. Mark Horowitz and former Rambus engineer Joel Karp testified about the specification's
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disclosure and displayed highlighted and annotated copies of the specification to the jury.⁶ To explain why the court admitted this testimony, a certain amount of background is required.

A. Background

1. Rambus's Motion *in Limine* to Exclude Inventor Testimony

The issue of who can testify about what a specification discloses first arose with Rambus's motion *in limine* to exclude certain deposition testimony of the inventors, Drs. Michael Farmwald and Mark Horowitz. *See* Docket No. 1612 (Jan. 27, 2006). Rambus argued that a claim's written description support should be determined from "the face of the application" alone. *See id.* at 2, fn.2 (quoting *New Railhead Mfg. LLC v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1295 (Fed. Cir. 2002)).

Hynix strenuously opposed the motion. Docket No. 1669 (Feb. 9, 2006). It argued that "extrinsic evidence, including inventor testimony, is frequently used in determining whether the written description requirement is met." *Id.* at 2. "The finder of fact **typically** evaluates extrinsic evidence – including testimony of inventors, qualified experts, and others skilled in the art – in determining whether the written description requirement is met." *Id.* at 3 (emphasis in original). Hynix noted that Drs. Farmwald and Horowitz had not been qualified as expert witnesses, but maintained that "their testimony, which characterizes their 'inventions' and the disclosures of the initial application, is probative of what one of ordinary skill in the art would understand from reading the patent." *Id.* at 8.

The court heard lengthy argument on the motion. *See generally* Hrg. Tr. 57:2-75:14 (Feb. 28, 2006). The hearing culminated with the following discussion between the court and counsel:

The Court: Well, unless I'm missing something, then, I don't think you and Mr. Detre agree, or disagree. You're both saying that the inventors could testify as one skilled in the art as to what the disclosure shows.

Mr. Furniss: Right. But he can't testify to an undisclosed -- he can't say, "well, I really meant to talk about delayed lock loop." He has to say, "I read the spec and it's there."

The Court: Right.

⁶ The demonstratives were marked as Exhibits 5703 and 5705. The court did not admit them into evidence. The jury did not have these demonstratives during its deliberations.

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The Court: But if the question were, "is this disclosed in your specification," that's okay?

Mr. Detre: Yes.

The Court: Okay.

Id. 73:3-75:13.

Following the hearing, the court denied Rambus's motion. Docket No. 1790 (Mar. 1, 2006). The court noted that extrinsic evidence is admissible to establish what a person of ordinary skill would perceive from reading the specification. *Id.* at 18 (citing *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1366 (Fed. Cir. 2004)). Thus, because Drs. Farmwald and Horowitz possessed (at least) ordinary skill in the art, their testimony was relevant to ascertain what the specification would disclose to a person of ordinary skill. *Id.*

2. Discussion on the First Day of Trial

A portion of the first day of trial was sacrificed to resolving evidentiary objections. *See generally* Tr. 1-144 (Mar. 15, 2006). Rambus noted that various exhibits were only relevant "if we have Dr. Farmwald find support for the various inventions in the specification. We don't intend to do that with Dr. Farmwald" *Id.* 125:21-126:4. Hynix responded that "if he doesn't ask where it is in the spec, I am sure I am going to ask [but not during] our case-in-chief." *Id.* 126:5-9. Rambus agreed that Hynix could ask such a question, but that such questions would have to wait for Hynix's rebuttal case because Rambus did not "intend to open the door with Dr. Farmwald." *Id.* 126:13-17.

Hynix answered incredulously:

Mr. Furniss: So the inventor himself isn't going to specify that the spec supports his patent. I'll be moving for a JMOL at that point. If the inventor doesn't say the spec supports the invention, I don't know how these claims can be valid.

The Court: That's what I was going to ask. If he doesn't touch it, are you going to want to?

Mr. Furniss: I might save it for when I recall him, but I'm certainly going to ask the inventors where the support is in the spec for these inventions, yes, I will call them in advance. Whether it comes in in the their case-in-chief or whether I call him in recall, it depends on the direct.

1 *Id.* 126:18-127:8. At that point, Rambus clarified that it would "put in evidence in support of the
2 spec . . . just not through Dr. Farmwald." *Id.* 127:12-14. The court ended the discussion, informing
3 the parties that the issue would be determined as the evidence developed and that Hynix should seek
4 permission before pursuing such a line of questioning with Dr. Farmwald during Rambus's case-in-
5 chief. *Id.* 127:15-17.

6 **3. Mr. Karp's Testimony**

7 Hynix called former Rambus Vice-President of Intellectual Property Joel Karp during its
8 invalidity case. *See* Trial Tr. 2305:17-23 (Apr. 5, 2006). Prior to Hynix's calling Mr. Karp, Rambus
9 moved to limit the scope of his examination to preclude Hynix from questioning him about written
10 description support for the asserted claims. Docket No. 1939 (Mar. 29, 2006). Hynix opposed the
11 motion. Docket No. 1949 (Mar. 30, 2006). Hynix argued: "the Federal Circuit has never limited the
12 range of evidence that may be considered probative on this issue." *Id.* 3:13-14. "Testimony of
13 experts, inventors, and other skilled artisans have been evaluated in determining the sufficiency of a
14 written description." *Id.* 3:15-16. To be clear, Hynix's position was that "Mr. Karp and Mr.
15 Steinberg are not being called as experts, but as percipient witnesses, so any concerns in Rambus's
16 motion relating to this issue are moot." *Id.* 1:8-9.

17 The court granted in part and denied in part Rambus's motion. Docket No. 2026, Ex. 5 (Apr.
18 18, 2006) (email ruling of April 2, 2006). "Karp and Steinberg can be questioned on why they
19 sought the amended claims, where in the specification there is support for the claims in suit and
20 whether they talked with the inventors about the applications." *Id.* at 1. The court rejected
21 Rambus's argument that testimony by Mr. Karp about written description support for the claimed
22 inventions would be expert testimony. *Id.* at 2.

23 Against this backdrop, Hynix began to question Mr. Karp. Hynix first established Mr. Karp's
24 technical background and experience in the DRAM industry. Trial Tr. 2307:9-2311:7 (Apr. 5,
25 2006). Mr. Karp is an engineer, not a lawyer; nonetheless, Hynix also established his background
26 and experience dealing with patents. *Id.* 2311:8-2317:1. Hynix then began to question Mr. Karp
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1 about the contents of the patents' specification. *E.g., id.* 2332:13-19; 2333:22-2334:14 (discussing
2 figures); 2336:16-2339:9 (discussing the "summary of invention" portion of the specification). After
3 "enough patent reading for the day," *id.* 2340:15-16, the trial adjourned.

4 Hynix concluded its examination of Mr. Karp the next day, and Rambus began its cross-
5 examination. *See* Tr. 2369:1-6 (Apr. 6, 2006). Mr. Karp further explained his history in the DRAM
6 field, his experience as an inventor, and his dealings with patent prosecutors. *Id.* 2382:22-2387:1.
7 Rambus finally turned to the subject of the patents' specification and how Mr. Karp first read it in
8 the early nineties as a published patent application while he was a Samsung employee. *Id.* 2391:13-
9 2393:15. At that point, Mr. Karp testified that he recalled recognizing in the early nineties a DLL
10 circuit disclosed in Figure 12 of the specification. *Id.* 2394:7-2395:13. Hynix did not object. *See*
11 *id.*

12 Rambus continued to question Mr. Karp about the specification. The following exchange
13 marks the beginning of the testimony Hynix feels unfairly prejudiced its right to a fair trial:

14 Q: Mr. Karp, do you understand that one of the issues involved in this case is a
15 contention as to whether the specification of the patent application supports
the claims involved in this suit?

16 A: Yes.

17 Q: And last week did I ask you to take a copy of the application and find the
18 support in the application that you could find for various features?

19 A: Yes.

20 Q: Did you do that on your own?

21 A: I did.

22 Q: How long did it take you to do it?

23 A: Less than three hours, but more than two hours. Somewhere in that time
frame.

24 Q: Okay. And what did you do?

25 A: I just read the application, and as you say things that related to specific
26 features -- I think there were five features that I was looking for.

27 Q: Okay.

1 A: Five or six. I brought my markup with me.

2 Q: Okay. So you have a copy of what you did?

3 A: Yes.

4 . . .

5 Q: What did you look at in order to perform this exercise?

6 A: I looked at the original PCT application, the one that I'd seen in 1991.

7 Q: Why did you pick that one?

8 A: Well, I don't know. Well, it's really the same. It's really the same disclosure
9 that was – that was used in all follow-on patents.

10 *Id.* 2413:3-2414:22. After a lengthy sidebar on an unrelated topic, Rambus offered Mr. Karp's
11 marked-up patent application, at which point Hynix objected on the basis that such testimony would
12 be improper expert opinion testimony. *See id.* 2452:12-2453:1.

13 Mr. Karp testified that he searched the specification for support for "the DLL," "the access
14 time register, the latency register," "auto-precharge," "dual edge clocking," and "block size." *Id.*
15 2454:24-2455:6. He explained that what he marked in the specification "reflect[ed] the support in
16 the specification that [he] was aware of during the time [he] worked at Rambus, including October
17 of 1998." *Id.* 2455:19-2456:7. Over the next fifteen minutes, Rambus questioned Mr. Karp on
18 where he found support in the application for various features, and Mr. Karp used the highlighted
19 specification to identify for the jury the specific language he felt provided written description
20 support for the five features listed above. *Id.* 2456:17-2467:23. The highlighted specification was
21 not admitted into evidence and was only used for demonstrative purposes.

22 4. Dr. Horowitz's Testimony

23 Rambus called Dr. Horowitz in rebuttal to Hynix's invalidity case. *See* Trial Tr. 2866:1-13
24 (Apr. 11, 2006). As with Mr. Karp, Rambus asked Dr. Horowitz a number of questions about the
25 specification. *See id.* 3024:21-3026:16 (Apr. 12, 2006). Similarly, Rambus provided Dr. Horowitz
26 with a copy of the specification and asked him to find written support for a number of features. *Id.*
27 3029:23-3030:17. Dr. Horowitz then testified for approximately forty-five minutes regarding where
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1 he found written description support for the features discussed by Mr. Karp. *Id.* 3030:18-3066:12.
2 Hynix did not object during Dr. Horowitz's testimony. *See id.*

3 Prior to Dr. Horowitz's testimony, however, Hynix objected that to any untimely, improper
4 expert testimony. *Id.* 3003:19-25. Hynix conceded that it intended to examine Dr. Horowitz on the
5 written description support for the claims and that its objection was "to the use of this on direct with
6 Professor Horowitz." *Id.* 3008:7-20. Hynix also suggested that "[i]f it's going to be something that
7 ends up potentially being marked as a demonstrative and is properly used in light of testimony that is
8 elicited by [Hynix] from Dr. Horowitz, then I think that might address our concerns." *Id.* 3003:20-
9 25. The court permitted Rambus to address the subject on its direct examination of Dr. Horowitz to
10 streamline the presentation of evidence. *See id.* 3008:7-20; *see also* 3067:3-3068:15 (explaining the
11 percipient nature of Dr. Horowitz's testimony).

12 **B. Waiver and Estoppel**

13 The bulk of Rambus's opposition argues that Hynix waived any objection to the testimony
14 using the highlighted specifications for demonstrative purposes and that Hynix should be judicially
15 estopped from objecting to such testimony based on its arguments earlier in the trial.

16 **1. Waiver**

17 To assign error to an evidentiary ruling, a "timely objection or motion to strike" must appear
18 in the record that "stat[es] the specific ground of objection, if the specific ground was not apparent
19 from the context." Fed. R. Evid. 103(a)(1).

20 **a. Hynix's Objections to Mr. Karp's Testimony**

21 With respect to Mr. Karp's testimony, Hynix filed a motion to strike the testimony the day
22 after it occurred. Docket No. 1988 (Apr. 7, 2006). Hynix also objected to the use of the highlighted
23 demonstrative during Mr. Karp's testimony. Trial Tr. 2452:22-2453:18 (Apr. 6, 2006).

24 Rambus argues that Hynix's waiver occurred during the court's resolution of the motion to
25 strike. The court tentatively ruled that Mr. Karp's testimony was admissible "to negate an inference
26 that Clark [sic, Karp] didn't believe the specification supported the disclosure of certain material that
27 turns out to be in the claim." *Id.* 2556:20-2557:5 (Apr. 7, 2006). The court also stated that it would
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1 not admit the highlighted specification into evidence. *Id.* 2557:8-19. The court then permitted
2 counsel to argue, at which point Hynix stated, "We're satisfied with the tentative." *Id.* 2602:22-23.
3 Rambus grumbled about the demonstrative not coming into evidence, but Hynix made no further
4 argument. *See id.* 2602:10-2604:22.

5 Hynix argues that its "acquiescence in the rulings of the Court was not a waiver of these
6 objections." Reply at 7:21. The court has found no Ninth Circuit authority on point, but persuasive
7 out-of-circuit authority undermines Hynix's position. "When an objecting lawyer withdraws his
8 objection after the judge rules, the judge has no reason to reconsider his ruling, and the other side's
9 lawyer has no reason to propose an alternative course of action." *United States v. Rogers*, 918 F.2d
10 207, 212 (D.C. Cir. 1990). "If, therefore, a lawyer has acquiesced in a ruling he once claimed was
11 erroneous, the lawyer must reassert his prior objection if he expects to preserve it for appeal." *Id.*;
12 *see also United States v. Schartner*, 426 F.2d 470, 476 (3d Cir. 1970) (suggesting that withdrawal of
13 an objection waives any right to raise the objection again). Given the adverse nature of the court's
14 tentative ruling, the court is inclined to treat Hynix's statement as acquiescence to the court's ruling
15 and the lack of any further objection as a waiver of Hynix's ability to object to Mr. Karp's testimony.
16 Nevertheless, prudence dictates continuing on to the merits of Hynix's objection. *E.g., United States*
17 *v. Washington*, 12 F.3d 1128, 1137 (D.C. Cir. 1994) (remarking in dictum that "the utterance of the
18 word 'okay' does not always constitute a withdrawal of an objection").

19 **b. Hynix's Objections to Dr. Horowitz's Testimony**

20 Hynix did not file a motion to strike Dr. Horowitz's testimony. Nor did Hynix object during
21 the testimony. Following the testimony, the court explained its reasons for permitting the testimony,
22 and again Hynix said nothing. *See* Trial Tr. 3066:20-3069:18 (Apr. 12, 2006). It did, however,
23 complain prior to Dr. Horowitz's testimony about the demonstrative and the possibility of untimely,
24 improper expert testimony. *See id.* 3003:7-3008:20. The record is not perfectly clear, but Hynix's
25 final statement of its grievance was not the subject area of Dr. Horowitz's testimony but "the use of
26 this [demonstrative] on direct with Professor Horowitz." *Id.* 3008:15-17.

27 It is counsel's responsibility to make objections clearly. *Cf.* Fed. R. Evid. 103(a)(1)

(objection must "stat[e] specific ground"); *United States v. Khan*, 993 F.2d 1368, 1377 (9th Cir. 1993) ("[T]o avail himself of the benefit of a continuing objection, [counsel] was required to request that his earlier objection apply to all other like evidence."). But the court is not blind to the reality of complex litigation, where trial attorneys must burn the candle at both ends night after night. For example, Hynix's counsel learned of the demonstrative (and the likely substance of Dr. Horowitz's testimony) at 10:15 p.m. on the eve of the testimony at issue. Trial Tr. 3003:9-13. Hynix phrased its objection the next morning between 8:05 and 8:15. *See id.* By then, the parties had been in trial for four weeks. At that point, a slight slippage in the clarity of an objection is understandable. Here, Hynix articulated some concern that the demonstrative and accompanying testimony might be improper expert testimony. Although Hynix failed to make a timely and clear objection to Dr. Horowitz's testimony, the court will nevertheless examine the merits of the objection as if Hynix clearly made it

2. Estoppel

Rambus argues that Hynix should be judicially estopped from arguing that Dr. Horowitz and Mr. Karp's testimony is inadmissible based on Hynix's arguments before and during trial that inventors and persons of skill in the art may testify to what a specification discloses. Judicial estoppel exists to prevent parties from gaining an advantage by flip-flopping or "the manipulative assertion of inconsistent positions, factual or legal." *Helpand v. Gerson*, 105 F.3d 530, 535 (9th Cir. 1997). It can be appropriate where a party takes a "clearly inconsistent" position, the party succeeded in persuading the court of its prior position, and the change in position would give an unfair advantage. *Biomedical Patent Management Corp. v. Cal. Dept. of Health Servs.*, 505 F.3d 1328, 1341 (Fed. Cir. 2007).

Hynix's sole argument in opposition is that Rambus's invocation of judicial estoppel "misses the point." Reply at 7:22. This is not very persuasive. Until Mr. Karp testified, Hynix urged that testimony from persons of skill in the art about what they perceive in a specification is admissible evidence relevant to the written description inquiry. Rambus disagreed, but the court sided with Hynix. Adapting to the court's rulings, Rambus offered the testimony of Mr. Karp and Dr. Horowitz

1 as to what they perceived in the specification and Hynix now complains that such testimony is
2 inadmissible expert testimony. Cries for the application of judicial estoppel greatly outnumber the
3 instances in which it is appropriate, but the doctrine appears to apply here. Nonetheless, the court
4 will address the merits of Hynix's objections.

5 **C. The Percipient Nature of the Testimony**

6 Hynix argues that it deserves a new trial because the testimony of Dr. Horowitz and Mr.
7 Karp was expert testimony. Hynix's motion, however, is conclusory on this point and does not
8 explain *why* their testimony falls under Federal Rule of Evidence 702's definition of expert
9 testimony.

10 The Federal Rules of Evidence do not explicitly define "expert testimony." Rule 702
11 encompasses any helpful "scientific, technical, or other specialized knowledge," whether presented
12 in the form of an opinion "or otherwise." Fed. R. Evid. 702. This suggests that expert testimony
13 extends to all fact and opinion testimony touching on "scientific, technical, or other specialized
14 knowledge." For example, in this case even simple questions like "What is a DRAM?" or "What is a
15 bit?" could be construed as calling for testimony that draws on "technical" or "specialized
16 knowledge." Read literally, this rule is astonishingly broad, especially in the context of patent
17 litigation. Indeed, the Federal Circuit recently remarked that "a witness not qualified in the pertinent
18 art" may not testify to "anticipation, or any of the underlying questions, such as the nature of the
19 claimed invention, what a prior art references discloses, or whether the asserted claims read on the
20 prior art reference" or "obviousness, or any of the underlying technical questions, such as the nature
21 of the claimed invention, the scope and content of prior art, the differences between the claimed
22 invention and the prior art, or the motivation of one of ordinary skill in the art to combine these
23 references to achieve the claimed invention." *Sundance, Inc. v. DeMonte Fabricating Ltd.*, --- F.3d
24 ----, 2008 WL 5351734, *6 (Fed. Cir. 2008). The Federal Circuit has also held that evidence of
25 infringement via the doctrine of equivalents must typically come from a qualified expert. *AquaTex*
26 *Industries, Inc. v. Techniche Solutions*, 479 F.3d 1320, 1329 (Fed. Cir. 2007). It further suggested
27 that "expert infringement testimony is generally required in cases involving complex technology."
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1 *Id.* at 1329, fn.7. However, there are limits to what constitutes "expert" testimony subject to
2 advance disclosure, written reports, *Daubert* gatekeeping, and so on. If there were not, patent
3 litigation would be more astronomically expensive than it already is.

4 The historical practice has been to treat a witness' factual testimony, i.e., testimony about
5 what a witness did or did not do or observed or did not observe, as not being "expert" testimony.
6 *Compare with Gomez v. Rivera Rodriguez*, 344 F.3d 103, 113 (1st Cir. 2003) (holding that expert
7 testimony "does not encompass a percipient witness who happens to be an expert"). As discussed in
8 *Gomez*, this interpretation follows from the Federal Rules' example of how the rules apply to a
9 treating physician's testimony; while a treating physician's observations all derive from specialized
10 knowledge, his testimony is not "expert testimony." *Id.* In the same vein, the court does not believe
11 it is "expert" testimony for an inventor to explain the process by which he made his discoveries, for
12 an engineer to describe the products he has built, or for a scientist to explain what he knew at a
13 certain point in time. These examples clearly draw on "technical" knowledge, yet they are not
14 expert testimony.

15 As a general rule of thumb, the court understands "expert testimony" to be testimony that a
16 witness prepares, as opposed to testimony of what a witness observes. For example, it includes
17 opinion testimony based upon a witness' analysis of facts using methods based on specialized
18 knowledge. To be sure, this interpretation of Rule 702 does not literally fit with the portion of the
19 rule's text that reads "in the form of an opinion *or otherwise*." But it harmonizes well with the three-
20 prong inquiry that is the heart of Rule 702, namely, that expert testimony (1) be "based upon
21 sufficient facts or data," (2) result from "reliable principles and methods," and (3) reflect the reliable
22 application of the principles and methods to the facts. It borders on the absurd to apply this three-
23 pronged inquiry to factual questions like "How did you come up with the invention?" or "What parts
24 did you include in your prototype?" or "How did you solve this problem before the existence of the
25 claimed invention?" Instead, this interrogation about foundation and methodology applies sensibly
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only to a witness' prepared conclusions or research.⁷

With this understanding of the meaning of "expert testimony," the court turns to the testimony challenged by Hynix.

1. Mr. Karp

Rambus's questioning of Mr. Karp was carefully calibrated *not* to seek opinion testimony. Mr. Karp's testimony reflected his understanding of what the specification disclosed when he assisted in drafting the claims at Rambus in 1998. *See* Trial Tr. 2453:18-2456:7 (Apr. 6, 2006). Because the testimony reflected Mr. Karp's understanding in 1998 and the basis for the claims he helped to draft, and not an opinion he formed in 2006 (though his understanding does not appear to have wavered), it was percipient, fact-based testimony.

2. Dr. Horowitz

As with Mr. Karp, Rambus tried to limit its questioning of Dr. Horowitz to elicit only percipient witness testimony. *See* Trial Tr. 3029:22-3030:1 ("Okay, did – you don't really – let me see how to ask this, did I ask you to find the support in the specification that you wrote for certain of the features that I told you were involved in this case?"). At certain points, he testified only to past occurrences. *E.g., id.* 3035:19-3031:17 (testimony about how Drs. Farmwald and Horowitz identified relevant prior art).⁸ Dr. Horowitz did testify, however, that he annotated his specification to "try to find support for many of the features in dispute" and to identify "references to things in the prior art that I thought were indicative that we thought this was an important feature since we cited it in some prior art[.]" *Id.* 3030:4-5; 3031:11-15. This testimony appears to reflect to some extent his current opinion of what his specification discloses and not exclusively what in 1990 he believed was

⁷ The court's distinction between opinion and factual observation also draws textual support from Rules 703, 704, and 705. All of these rules address the procedure for exposing the foundation of an expert's opinion (which may be based upon inadmissible hearsay). These rules do not speak to the percipient observations of a person of skill (which are not plagued by the admissibility issues underlying opinion testimony).

⁸ Mr. Stone refined this line of questioning in a later phase of trial. *See, e.g.,* Trial Tr. 4118:6-18 (inquiring about what alternatives Dr. Horowitz considered when he and Dr. Farmwald developed the Rambus DRAM and filed the original patent application); 4138:13-19 (inquiring about what Dr. Horowitz did while writing the specification) (Mar. 5, 2008).

1 disclosed the specification. However, there is no suggestion that there is a difference between what
2 he considered in 1990 and what in the specification he currently believes offers support for the
3 subject features.

4 The court did not err in permitting Rambus to elicit this testimony even if it is deemed expert
5 testimony. Hynix repeatedly sought to question Dr. Horowitz about his opinions regarding the
6 specification and what it did or did not disclose to a person of ordinary skill in the art. When Hynix
7 raised its objection to Dr. Horowitz's use of the highlighted specification, the court explained its
8 inclination to permit the testimony if used to rebut questioning by Hynix, but to exclude it otherwise.
9 *See* Trial Tr. 3007:3-3008:18 (Apr. 12, 2006). The court had "understood, and maybe I'm wrong,
10 that Hynix wanted to examine Mr. -- Dr. Horowitz on support for the claims at issue in the
11 specification." *Id.* 3007:3-7. Rambus shared that understanding. *Id.* 3007:8-9. And Hynix
12 confirmed it. *Id.* 3008:15-17 ("Your Honor, we do."). The court then ruled that because Hynix
13 intended to examine Dr. Horowitz on written description support, Rambus could go into the subject
14 on direct examination. *Id.* 3008:18-19.

15 This ruling was correct because Hynix opened the door to Dr. Horowitz testifying regarding
16 his opinion about the contents of the specification. *E.g., Burgess v. Premier Corp.*, 727 F.2d 826,
17 834 (9th Cir. 1984) ("Premier's counsel waived this objection by first raising the subject himself on
18 cross-examination. . . . Thus, while Tilton's testimony did indeed contain a legal conclusion, Premier
19 et al. waived its right to object."). To be sure, the court permitted Rambus to question Dr. Horowitz
20 on this subject during its direct examination before Hynix questioned him on it, but it did so
21 following Hynix's representation that it intended to ask such questions. This ruling fell within the
22 court's power to control the order of interrogation and was permissible to "avoid needless
23 consumption of time." Fed. R. Evid. 611(a)(2). The trial was drawing to a close (Dr. Horowitz was
24 the second-to-last witness to testify and April 12 was the last day of testimony) and Hynix was not
25 harmed by a slight inversion in the order of examination.

26 **D. Claim Limitation Shorthand**

27 Hynix also complains that Mr. Karp and Dr. Horowitz's testimony should have been
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1 excluded pursuant to Rules 402 and 403 because of its limited relevance. Specifically, Hynix
2 complains that because Mr. Karp and Dr. Horowitz conceded that they had not examined the claims
3 but were testifying only about "features," the testimony was not relevant.

4 Hynix's objection⁹ overlooks the parties' conduct in explaining complex technology to the
5 jury. The parties throughout the litigation have referred to various claim limitations as "features."
6 Indeed, Hynix's motion refers to limitations by shorthand like "delay locked loop," "block size
7 information," and "operation code." At trial, Mr. Taylor (Hynix's expert) testified in the same
8 manner as Mr. Karp and Dr. Horowitz, making shorthand references to various features and opining
9 that claims reciting limitations including such features were invalid. *E.g.*, 1740:8-12 ("operation
10 code"); 1742:22-25 ("The delay locked loop element is not adequately described."); 1743:8-10 ("For
11 the '918 patent, claim 24, neither the access time register nor the block size information is
12 adequately described in the patent."). This practice reduced juror confusion by preventing the
13 proceedings from getting mired in the complexities of the claim language where there was general
14 agreement that certain shorthand applied to certain limitations. The court therefore cannot agree
15 with Hynix that this testimony should have been excluded because the witnesses' testified about
16 features without being familiar with specific claim language.

17 Nevertheless, Hynix's objection demonstrates the reduced relevance of Mr. Karp and Dr.
18 Horowitz's testimony. The relevance of identifying "features" in the specification is as follows: (1) a
19 witness has identified a "feature" in the specification; (2) his identification of a "feature"
20 corresponds to a claim limitation; (3) the identification of a claim limitation in the specification
21 tends to prove that a claim has written description support. Because Mr. Karp and Dr. Horowitz did
22 not reference the claim language, but only the "features in dispute," the second link in the chain of
23 reasoning was weak and essentially left to the jury to decide whether the witnesses' discussion of
24 features correlated with specific claim limitations. This link was not so weak that the evidence
25 should have been excluded, but it did affect the weight of their testimony.

27 ⁹ Hynix's motion to strike Mr. Karp's testimony raised this issue. *See* Docket No. 1988, 2-3.
28 Any objection to Dr. Horowitz's testimony on 402/403 grounds was less clear.

IV. EVIDENCE AND ANALYSIS REGARDING WRITTEN DESCRIPTION

Hynix took two approaches to the written description issue. It first contended that the specification disclosed only a narrow, multiplexed bus architecture and that any claim that was not limited to such an architecture was invalid. It next contended that various limitations – "access time register," "delay locked loop," "block size information," and "operation code" – were not adequately described. Testimony touching on whether or not Rambus's claims satisfied the written description requirement came from five witnesses: Hynix's expert David Taylor, Rambus's expert Robert Murphy, inventor Dr. Mark Horowitz, and Rambus's two vice-presidents of intellectual property when the claims were filed, engineer Joel Karp and attorney Neil Steinberg. The court addresses the issues as framed at trial by Hynix.

A. The Absence of Limitations Drawn to a Packetized, Multiplexed Bus

From the beginning, the overarching issue in this litigation has been whether or not Rambus's claims are limited to the packetized, multiplexed bus architecture discussed in the specification. *E.g., Rambus Inc. v. Infineon Techs. AG*, 318 F.3d 1081, 1094-98 (Fed. Cir. 2003) (construing claims as not so limited). The claims-in-suit do not recite limitations drawn to a narrow, multiplexed bus architecture or to the use of a packet-based protocol. Accordingly, Hynix argues that each claim-in-suit is invalid because the written description discloses devices and methods without such limitations.

1. The Written Description Requirement

A patent must include "a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same." 35 U.S.C. §112, ¶ 1. This disclosure is the consideration the public receives in exchange of the patentee's right to exclude. *LizardTech*, 424 F.3d at 1344. This clause embeds two distinct legal requirements. *See id.* at 1344-45. First, a patentee's specification must "enable a person of skill in the art to make and use the full scope of the invention without undue experimentation." *Id.* at 1345. Second, the specification must "describe the invention sufficiently to convey to a person of skill in the art that the patentee had possession of the claimed

invention at the time of the application, i.e., that the patentee invented what is claimed." *Id.*¹⁰

Although not precisely defined, the scope of written description law has some parameters. A claim that is obvious in light of the disclosed invention (and presumably enabled by the disclosure) does *not* satisfy the written description requirement unless it is also described in the specification. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997). Yet the inventor's description of the invention need not slavishly copy the words used in the claims. *Id.* ("Although the exact terms need not be used *in haec verba*, . . . the specification must contain an equivalent description of the claimed subject matter."). Thus, it is somewhere between the specification that describes the claimed invention using the same words as the claim and the specification that describes a closely related invention (but not the claim-in-suit) that a claim goes from valid to invalid.

To distinguish between these extremes, the Federal Circuit has suggested what test shall *not* be used. The court should not hold a claim-in-suit invalid for simply "omitting" an element of the invention described in the specification. *Reiffin v. Microsoft Corp.*, 214 F.3d 1342, 1347 (Fed. Cir. 2000) (Newman, J., concurring) ("[N]either law nor policy requires that the claim contain all the elements described in the specification as part of the new machine or method."); *Bayer AG v. Sony Elecs., Inc.*, 229 F. Supp. 2d 332, 360 (D. Del. 2002) (rejecting the "omitted element" test); *cf. Cooper Cameron*, 291 F.3d at 1323 (explaining that in *Gentry Gallery* "we did not announce a new 'essential element' test mandating an inquiry into what an inventor considers to be essential to his invention and requiring that the claims incorporate those elements"). This follows from permitting inventors to write claims of varying scope and content. *Reiffin*, 214 F.3d at 1347 (discussing claiming conventions). Indeed, it is precisely the result Congress intended by permitting the

¹⁰ These two requirements normally "rise and fall together." *LizardTech*, 424 F.3d at 1345. Nonetheless, Hynix does not assert that the claims-in-suit are invalid for lack of enablement. This litigation posture embodies the concern articulated by scholars that the rise of the amorphous written description requirement comes at the expense of inquiring into whether or not the claims are enabled. *Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1326 n.6 (Fed. Cir. 2003) (Rader, J., concurring) (citing Mark D. Janis, "On Courts Herding Cats: Contending with the 'Written Description' Requirement (and Other Unruly Patent Disclosure Doctrines)" 2 Wash. U.J.L. & Pol'y 55, 62, 107 (2000)).

1 inventor to file a chain of dependent claims, with each claim adding more specificity, i.e., elements
2 of the claimed invention. *See* 35 U.S.C. § 112, ¶¶ 3-5. The benefit of this approach is to reduce the
3 risk borne by the inventor who lacks perfect knowledge of the prior art. This claiming practice
4 allows the inventor to draft a broad but likely weak claim and follow it with stronger but narrower
5 claims incorporating more of the elements of the disclosed invention. Thus, no matter what prior art
6 is later uncovered, the inventor will likely retain some benefit for sharing his invention with society
7 in the form of the narrowest, valid claim. The "omitted element" approach to the written description
8 requirement contravenes this statutory purpose.

9 The rejection of the omitted element test allows a patentee to disclose a "species" of an
10 invention yet write a claim to the invention's "genus." *See Bilstad v. Wakalopulos*, 386 F.3d 1116,
11 1123-25 (Fed. Cir. 2004). Thus, a claimed invention that is held together with a screw may support
12 claims that recite a generic "fastener" limitation. *E.g., Lizardtech, Inc. v. Earth Resource Mapping,*
13 *Inc.*, 433 F.3d 1373, 1380-81 (Fed. Cir. 2006) (Rader, J., dissenting from denial of rehearing *en*
14 *banc*). And yet, in some situations, omitting an important aspect of the invention disclosed in the
15 specification will render a claim invalid. *Bilstad*, 386 F.3d at 1125-26. The Federal Circuit has
16 recognized two exceptions to "the general rule that disclosure of a species provides sufficient written
17 description support for a later filed claim directed to the genus." *Id.* at 1125. The first exception is
18 for unpredictable fields, like areas of polymer chemistry, where possession of a species does not
19 suggest that the patentee had possession of the entire genus. *Id.* at 1125 (citing *In re Curtis*, 354
20 F.3d 1347 (Fed. Cir. 2004)). The second exception is for cases where the inventor expressly
21 disclaims the other members of the genus. *Id.* at 1125-26 (citing *Tronzo v. Biomet, Inc.*, 156 F.3d
22 1154 (Fed. Cir. 1998)); *Rambus Inc. v. Hynix Semiconductor, Inc.*, 569 F. Supp. 2d 946, (N.D. Cal.
23 2008). This second exception may provide a home for cases like *Gentry Gallery v. Berkline Corp.*
24 as well.

25 2. The Packetized, Multiplexed Bus Architecture

26 Mr. Taylor testified that none of the claims-in-suit satisfy the written description
27 requirement. Tr. 1695:15-22 (Mar. 29, 2006). He opined that the only invention disclosed by the
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1 specification was "a new bus interface and devices that are specifically altered to be able to match
2 up with the operation of that bus." *Id.* 1696:9-17. He formed this opinion in part from the
3 specification's discussion of prior art memory interfaces that were not multiplexed. *See id.* 1712:19-
4 1715:5. He also based it on the specification's discussion of the objectives of the invention, and his
5 opinion that all of the objects of the invention relate to the new bus interface. *Id.* 1719:8-1720:21.

6 Were the "omitted element" test a viable approach to written description law, it seems highly
7 likely that many of Rambus's claims would be invalid for excluding limitations drawn to prominent
8 features of its disclosure. But as discussed above, it is not. Yet Mr. Taylor employed something
9 similar to this approach to explain why he believed that Rambus's founders did not possess the
10 claimed inventions that recite a "block size information" limitation at the time of filing:

11 Q: And, in your opinion, is the concept of block size information described in
12 the specification such that one of ordinary skill in the art would recognize
13 block size information and the claims in which it appears as an inventive
14 element?

15 A: The only type of block size information that is described in the patent is
16 block size information that is received by the part in the packet that I
17 described to you earlier. There is no discussion whatsoever of receipt of
18 block size information in any other way.

19 . . .

20 Q: And, as you understand it, are the claims at issue that include the term "block
21 size information," are those claims limited to packets?

22 A: No, they are not.

23 Q: And in terms of the claims that are disclosed in the Rambus patents, are those
24 claims limited to a narrow multiplexed bus?

25 A: No, they are not.

26 Q: Okay. Now, do you believe that the Rambus patent supports the claims for
27 block size information outside of the context of a packet-based -- of packets?

28 A: No, I do not.

Q: Why not?

A: Because the -- the patent is describing only a single way of being able to
receive block size information. If it's to be extended to other areas, then
there has to be some description of what those other areas might be.

Trial Tr. 1729:14-1731:15 (Mar. 29, 2006).

1 Mr. Taylor testified likewise regarding claims with limitations drawn to an "access time
2 register." *Id.* 1731:16-1733:10. Mr. Taylor conceded that the specification disclosed an access time
3 register, but that the only disclosed access time register operated with the patent's "narrow bus," and
4 that there was no disclosure of the access time register being used with another type of bus. *Id.*
5 1732:10-15. Thus, Mr. Taylor concluded that there was no written description support for Rambus's
6 claims reciting an access time register without including a limitation reciting the narrow bus
7 architecture. Similarly, Mr. Taylor testified that there was no written description support for claims
8 reciting an "operation code" limitation because the specification's discussion of "operation codes"
9 always occurred in the context of the packetized protocol and the multiplexed bus architecture. *Id.*
10 1735:18-1740:12.

11 Hynix does not utter the phrase "omitted element" test in its argument. It retreats to
12 arguments like "[a] narrow disclosure can limit the scope of the patentee's right to exclude" and "a
13 broad claim is invalid if the entire specification clearly indicates that the invention has a much
14 narrower scope." Mot. at 5:12-15. A fair summary, however, of Hynix's arguments is that the
15 Farmwald/Horowitz specification discloses a very detailed, very particular bus architecture and that
16 it cannot provide support for claims that lack limitations embodying the specialized bus architecture.
17 This ignores the "general rule" that a specific disclosure *may* support more generic claims. *See*
18 *Bilstad*, 386 F.3d at 1125. Hynix never argued or offered evidence that bus architectures are
19 "unpredictable" or that possessing interface circuitry like an access time register adapted for use
20 with a multiplexed bus does not also suggest possession of an access time register for use with other
21 busses. Hynix has at times suggested that Rambus's claims should be deemed invalid under the
22 *Tronzo* line of cases based on the inventors' statements in the specification about prior art busses, but
23 that argument is not so compelling as to require judgment as a matter of law, *see Rambus*, 569 F.
24 Supp. 2d at 997-1000, or a new trial where the jury has rejected it. Accordingly, Hynix's motion
25 with respect to these claim limitations is denied.

26 **B. "Delay Locked Loop"**

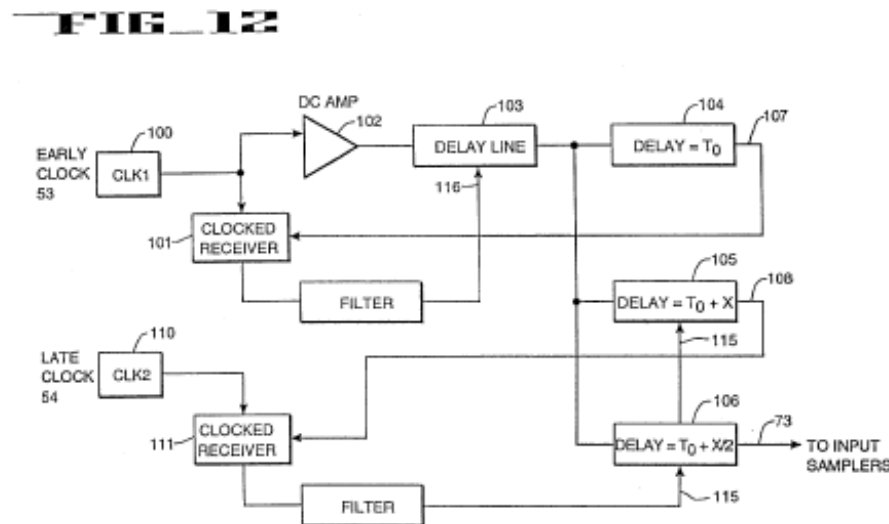
27 Hynix also challenges the written description support for claims reciting a "delay locked
28

loop" limitation. Unlike Hynix's arguments regarding "block size information," "access time register," and "operation code," Hynix's arguments regarding "delay locked loop" do not turn on the claims' failure to include limitations drawn to the bus architecture. Hynix instead challenges the substance of whether or not a delay locked loop is disclosed in the specification.

1. The Experts' Trial Testimony

Hynix relies on the testimony of a single witness, its technical expert David Taylor. Mr. Taylor opined that Rambus's specification did not adequately disclose a delay locked loop, and that various claims including a delay locked loop limitation were therefore invalid. *See* Tr. 1722:2-1726:22; 1742:19-1745:6.

Mr. Taylor testified that the Farmwald/Horowitz specification does not mention the word "delay locked loop" or "DLL." *Id.* 1725:25-1726:7. And Rambus's expert, Mr. Murphy, agreed. *Id.* 2683:25-2684:4 (Apr. 10, 2006). Instead, Mr. Murphy concluded that support for claims reciting a DLL came from part of the specification's Figure 12 (reproduced below). *Id.* 2682:16-2683:3.



Mr. Taylor disagreed. To him, Figure 12 disclosed a circuit for generating a mid-point clock. *Id.* 1724:10-13. He complained that Rambus has "carved out a piece" of the circuit, but he conceded "[t]hat piece someone could call a delay locked loop." *Id.* 1724:3-9. Despite his concession, Mr. Taylor believed that one of skill in the art would not "recognize this piece of the patent as suggesting

1 that the inventor had in mind the possession of a delay locked loop circuit as an inventive element."
 2 *Id.* 1725:5-10. A fair summary of Mr. Taylor's opinion is that he felt that a person of ordinary skill
 3 would not recognize the delay locked loop circuit within Figure 12 because the specification does
 4 not explain how it works or teach how to use the DLL in a DRAM. *See id.*¹¹ Rambus did not cross-
 5 examine Mr. Taylor about this aspect of the written description. But when questioned about
 6 obviousness, Mr. Taylor testified that he believed that a DLL was part of a DRAM designer's
 7 "toolbox" and that many references predating 1990 disclosed DLL circuits. *See* 1898:21-1899:17.

8 Mr. Murphy testified that he found support for a DLL in Figure 12. *Id.* 2682:16-2683:3
 9 (Apr. 10, 2006).¹² Hynix did not challenge the factual basis for Mr. Murphy's opinion on cross-
 10 examination.

11 2. The Sufficiency of Conclusory Expert Testimony

12 Hynix argues that Mr. Murphy's opinion was too conclusory to constitute sufficient evidence
 13 on which the jury could base its verdict. Such conclusory opinion testimony is generally permitted
 14 at trial because of the opportunity to cross-examine the expert. Fed. R. Evid. 705; *Arthur A. Collins,*
 15 *Inc. v. N. Telecom Ltd.*, 216 F.3d 1042, 1047 (Fed. Cir. 2000); *Symbol Technologies, Inc. v. Opticon,*
 16 *Inc.*, 935 F.2d 1569, 1574-75 (Fed. Cir. 1991) ("Rule 705 functions to abbreviate trials by permitting
 17 opinion testimony without factual foundation."). Thus, Rambus's evidence that Figure 12 disclosed
 18 a DLL and that a person of ordinary skill would recognize its disclosure was properly admitted.

19 Hynix cites three cases to suggest that a witness cannot give conclusory testimony about
 20 whether a patent's written description supports a claim. Each case raises questions of sufficiency
 21 and relevancy, so the court discusses each in turn.

22 The oldest case, *Lockwood v. American Airlines, Inc.*, arises from the trial court's summary
 23 judgment of invalidity for obviousness for one of the patentee's patents and anticipation for another.

25 ¹¹ Hynix did not argue that Rambus's claims reciting a delay locked loop are invalid for
 26 want of enablement.

27 ¹² Mr. Murphy also found written description support for a DLL in the phrase "variable
 28 delay lines 103 and 105 are adjusted via feedback lines 116, 115 so that input receivers 101 and 111
 sample the bus clocks just as they transition." Tr. 2683:4-17 (Apr. 10, 2006).

1 The patentee sought to avoid certain prior art by showing that it was entitled to an earlier application
2 date. The patentee argued that its expert's declaration raised a triable issue of fact as to whether it
3 met the written description requirement because its expert stated that a person of ordinary skill
4 reading the specification at the time of an earlier application would have realized that the patentee
5 "envisioned" the claimed invention in addition to what the patentee disclosed. 107 F.3d at 1572.
6 The Federal Circuit rejected this argument, holding that "[i]t is not sufficient for purposes of the
7 written description requirement of § 112 that the disclosure, when combined with the knowledge in
8 the art, would lead one to speculate as to modifications that the inventor might have envisioned, but
9 failed to disclose." *Id.* The court further stated: "Each application in the chain must describe the
10 claimed features." *Id.* Because there was no dispute that the specification failed to disclose the
11 claimed invention, the claim was not entitled to the original filing date and held invalid. *Id.*

12 *Lockwood* addresses the substantive sufficiency of a written description necessary to entitle a
13 patent applicant to an earlier filing date, not the question of the admissibility of a conclusory expert
14 opinion. Thus, *Lockwood* does not speak to the facts of this case because there is no similarity in the
15 quality of the testimony of *Lockwood's* expert and Mr. Murphy's. Mr. Murphy did not testify that
16 one of skill in the art could have "envisioned" the delay locked loop limitation of the claimed
17 invention from the specification. He testified that "this figure clearly discloses a delay line and
18 feedback circuitry and a DLL." Trial Tr. 2683:1-3. While *Lockwood* marks an important boundary
19 on the sufficiency of a patent's written description for the purposes of a patentee's establishing an
20 effective filing date, it does not place a limit on "conclusory" testimony.

21 Hynix's second case also arises in the context of summary judgment proceedings.
22 *TurboCare Div. of Demag Delaval Turbomachinery Corp. v. Gen. Elec. Co.*, 264 F.3d 1111, 1119
23 (Fed. Cir. 2001). The patentee in *TurboCare* argued that its original specification inherently
24 disclosed a limitation and submitted a conclusory expert declaration to that effect. *Id.* The Federal
25 Circuit agreed that the claimed invention "may have been obvious" based on a "vague reference" in
26 the specification. But the court pointed to its prior decision in *Lockwood* to hold that no reasonable
27 juror could conclude that the original specification indicated to a person of skill in the art that the

1 patentee possessed the claimed invention. *Id.* While the *TurboCare* court obliquely criticized the
2 conclusory nature of the expert's declaration, the case turned on the substantive nature of the expert's
3 conclusion, not its conclusory form.

4 At oral argument, Hynix directed the court to its third case, the Federal Circuit's opinion in
5 *CytoLogix Corp. v. Ventana Medical Systems, Inc.*, 424 F.3d 1168 (Fed. Cir. 2005). The case differs
6 from the prior two in significant respects: (1) it arises in the context of determining whether to grant
7 a new trial and (2) addresses the sufficiency of evidence needed to prove invalidity for lack of a
8 sufficient written description. The issues arise from the Federal Circuit's decision that the trial court
9 erred in its construction of a claim term. 424 F.3d at 1174. Due to this error, the court had to
10 determine whether to remand for a new trial on various validity issues. *See id.* at 1176. Somewhat
11 unusually, the trial court had postponed claim construction until the close of evidence, and thus the
12 defendant had already presented its evidence in support of its invalidity case under the claim
13 construction that it unsuccessfully urged below but received on appeal. *Id.* In deciding whether to
14 remand for a new trial, the Federal Circuit inquired whether the defendant had introduced sufficient
15 evidence to support a verdict of invalidity had the jury been given the correct claim construction.
16 *See id.* Examining the substance of the defendant's written description case, the Federal Circuit
17 concluded that even with the proper claim construction, no reasonable jury could have held the
18 claim invalid for lack of written description. *Id.*

19 The court reached this conclusion because the defendant's expert's testimony was "general
20 and conclusory, consisting of little more than the statement 'I believe that the claim would be
21 invalid, because I can't find any support for [the claim] in the specification.'" *Id.* Relying on *Koito*
22 *Manufacturing Co. v. Turn-Key-Tech, LLC*, 381 F.3d 1142, 1152 (Fed. Cir. 2004), which held that
23 substantial evidence did not support a jury verdict of obviousness because of the conclusory nature
24 of the testimony of the expert urging that the claim was obvious, the *CytoLogix* court held that
25 "[s]ubstantial evidence of invalidity must meet certain minimum requirements" and that "[g]eneral
26 and conclusory testimony . . . does not suffice as substantial evidence of invalidity." *Id.* (quoting
27 *Koito*). Thus, despite its revision of the trial court's claim construction, the Federal Circuit held that
28

1 the appellant failed to justify a new trial on written description because it failed to introduce
2 "substantial evidence" to support its written description defense. *Id.* Neither the *Koito* nor
3 *CytoLogix* opinions mention Federal Rule of Evidence 705 or the Federal Circuit's decision in
4 *Symbol Technologies*.

5 Hynix argues that *CytoLogix* and *Koito* stand for the proposition that expert testimony about
6 validity generally must be "substantial" and not "general and conclusory." The court does not read
7 those cases so broadly, especially in light of Rule 705 and *Symbol Technologies*. In both *CytoLogix*
8 and *Koito*, the conclusory testimony was proffered by the party with the burden of persuading the
9 jury that a claim was invalid by clear and convincing evidence. This context is critical to those
10 holdings. Read in light of the burden of persuasion, the Federal Circuit's rule from *CytoLogix* and
11 *Koito* is that conclusory testimony alone cannot make something "highly probable" because a
12 reasonable jury would possess some inherent doubt about such conclusory opinions.

13 In this case, the jury did not have to be persuaded by Mr. Murphy's opinion that Rambus's
14 position was highly probable. The jury simply had to conclude that Hynix had not proven its
15 contention by clear and convincing evidence. After hearing Mr. Taylor's testimony, the jury heard
16 Mr. Murphy disagree. His disagreement was more than a bare bones conclusion (though he did not
17 dwell on presenting his factual foundation). Hynix failed to cross-examine him. In light of Hynix's
18 failure to challenge Mr. Murphy's testimony, a reasonable jury could conclude that Hynix could not
19 meet its high burden of persuasion by its simple failure to challenge Mr. Murphy's testimony. This
20 reversal of burdens from the contexts described in *Koito* and *CytoLogix* illustrates why those cases
21 should be narrowly read to apply only to the quality of expert testimony necessary to sustain a clear
22 and convincing burden of persuasion at trial.

23 Accordingly, the jury could have rested its verdict on Hynix's failure to produce sufficient,
24 undisputed clear and convincing evidence of the alleged lack of an adequate written description.
25 The court therefore denies Hynix's motion for judgment as a matter of law on this point.

26 3. The Weight of the Evidence

27 Hynix's alternative motion for a new trial requires the court to consider for the relative
28

1 strengths of each sides' cases and arguments. The court therefore turns to the remainder of Rambus's
2 testimony.

3 Rambus also elicited testimony about written description support for a DLL from Joel Karp.
4 In the early nineties, Joel Karp worked as an engineer on DRAMs for Samsung, during which he
5 became aware of Rambus and the Farmwald/Horowitz specification (by way of a published patent
6 application). Tr. 2391:13-22 (Apr. 6, 2006). He read the application "cover to cover" to help
7 Samsung understand Rambus, which was then a new, relatively unknown company. *Id.* 2393:2-12.
8 He recalled recognizing a DLL in Figure 12 because he remembered that DLLs were something that
9 people were "talking about" and "interested in doing in future products" at Samsung. *Id.* 2394:21-
10 2395:13. He testified to being concerned at the time because Rambus might amend its claims to
11 cover the DLL he recognized in Figure 12. *See id.* 2395:14-2396:6; 2448:10-2449:25. Dr. Horowitz
12 similarly testified that Figure 12 disclosed a DLL. *See id.* 3047:12-13 (Apr. 12, 2006).

13 Hynix criticizes this testimony for its focus on the "feature" of a DLL without any
14 comparison to the claim language at issue.¹³ For this argument to have any force, the DLL identified
15 by Mr. Karp and Dr. Horowitz would have to *not* be coupled to clock receiver circuitry to generate
16 two internal clock signals. But as Mr. Taylor testified, Figure 12 discloses a circuit for generating a
17 mid-point clock. Indeed, the figure prominently displays the clock receiver circuitry. Thus, the
18 witnesses' testimony is only discredited if Figure 12 does not show a DLL being used to generate
19 internal clock signals. Hynix could have asked such a follow-up question to Mr. Karp or Dr.
20 Horowitz, but it did not. The court recognizes that their testimony carries less force because
21 Rambus failed to link their testimony about features to specific claim limitations, but Hynix did not
22 challenge such a link either.

23 Considering all of this testimony, the biases of each of the witnesses, and the burden of

24
25 ¹³ For example, the "DLL" limitation of claim 34 of the '105 patent is "clock receiver
26 circuitry to receive the first external clock and wherein the internal clock generation circuitry includes
27 delay locked loop circuitry, coupled to the clock receiver circuitry, to generate the first internal clock
28 signal and the second internal clock signal using at least the first external clock." '105 Patent, col. 29,
ll. 9-15. Claim 36 of the '020 patent's "DLL" limitation is less exacting; it merely recites a "clock
alignment circuit" that "generates an internal clock signal" which causes the output of data. '020 Patent,
col. 28, ll. 31-38.

1 persuasion Hynix was required to meet, the court is not persuaded that a new trial is justified with
2 respect to the written description support for a DLL. Mr. Taylor conceded that Figure 12 discloses a
3 DLL. Mr. Karp, a person of ordinary skill in the art, convincingly explained how he recognized the
4 DLL in Figure 12 and took steps to protect Samsung from potential infringement years before this
5 litigation. The presumption of validity required Hynix to prove its written description argument by
6 clear and convincing evidence. The court does not possess a firm conviction that the jury erred
7 when it concluded that Hynix had not met its burden.

8 **C. "Dual Edged Clocking"**

9 As with "delay locked loop," Hynix challenges whether the specification actually discloses
10 outputting data on both edges of the external clock signal. Claims 32 and 36 of U.S. Patent No.
11 6,378,020 include the same limitations drawn to how the device outputs data. Specifically, the
12 claimed devices include "output driver circuitry" that "outputs a first portion of data in response to a
13 rising edge transition of the external clock signal" and "outputs a second portion of data in response
14 to a falling edge transition of the external clock signal." '020 Patent, col. 28, ll. 12-17. In other
15 words, these two claims are drawn toward devices that output data on both edges of the clock signal.
16 Hynix argues that it is entitled to judgment as a matter of law (or a new trial) because the written
17 description does not disclose a device with such circuitry.

18 Hynix again relies on the testimony of Mr. Taylor, which comprises the following exchange:

19 Q: In your opinion, does the Rambus patent adequately disclose a dual edge
20 clocking scheme where data is output in response to the rising and falling
edges of the external clock?

21 A: No, it does not.

22 Q: And what is the basis for your opinion?

23 A: Because there's very little description at all in the patent. If I remember
24 correctly, it's one sentence.

25 Q: Okay. Let's go on.

26 Trial Tr. 1728:11-20 (Mar. 29, 2006). Mr. Taylor's testimony on this point is hardly persuasive, let
27 alone so clear that no reasonable jury could have concluded that Hynix failed to meet its burden of
28 proving by clear and convincing evidence that a person of skill in the art would not recognize that

1 Drs. Farmwald and Horowitz possessed the claimed inventions incorporating dual-edge clocking.
 2 Mr. Taylor went so far as to volunteer that he remembered "one sentence" of the patent describing
 3 outputting data on both edges of the clock signal.¹⁴

4 Hynix cites one other passage of testimony, that of Neil Steinberg, the Rambus attorney that
 5 drafted the claim language at issue. Hynix uses his testimony to suggest that the specification
 6 discloses outputting data based on an internal clock signal, not on the transitions of an external clock
 7 signal. Mot. at 13:1-2 (citing Trial Tr. 2257:16-2258:12 (Apr. 5, 2006)). But Mr. Steinberg's
 8 testimony was that the embodiment disclosed in the specification uses the transitions of an external
 9 clock signal to derive an internal clock signal, and that the device outputted data based on the
 10 internal clock signal's transitions. Thus, the disclosed device outputs data in response to the rising
 11 and falling transitions of an internal clock signal, which occur in response to the rising and falling
 12 transitions of the external clock signal. Nothing about the claim language required Rambus to
 13 disclose the output of data in *direct* response to the transitions of the external clock signal.

14 Additional evidence in the record supports the jury's verdict. Mr. Murphy testified that the
 15 specification disclosed outputting data on both edges of the clock. Trial Tr. 2680:20-2682:12. He
 16 relied on the portion of the specification discussing how "a 500 megahertz bus preferably uses a 250
 17 megahertz clock rate," implying that data was sent and received on both edges of the clock signal.
 18 Other witnesses – Neil Steinberg, Joel Karp, and Dr. Mark Horowitz – further explained portions of
 19 the specification describing the use of both edges of the clock signal to drive the output of data,
 20 particularly the interplay between the external clock signal, internal clock signal, and output of data
 21 shown in Figures 10, 12, and 13. Hynix's motion with respect to the written description support for
 22 the rising and falling edge limitations is denied.

23 //

24
 25 ¹⁴ The court sustained Rambus's objection to some of Mr. Taylor's testimony as speculative.
 26 See Trial Tr. 1727:13-1728:5. The thrust of that testimony illuminates this issue. Mr. Taylor suggested
 27 that the seemingly minimal disclosure of outputting data on both edges of the clock resulted because
 28 the inventors must have believed that doing so was obvious (this being the objectionable speculation).
 Far from suggesting that Drs. Farmwald and Horowitz did not possess this aspect of the claimed
 invention, Mr. Taylor believed, based on his reading of the specification, that there was no need to
 describe this aspect of the claimed inventions because it was already so well known in the art.

IV. ORDER

For the foregoing reasons, the court denies Hynix's motion for judgment as a matter of law or for a new trial regarding the written description requirement.

DATED: 1/27/2009



RONALD M. WHYTE
United States District Judge

Notice of this document has been electronically sent to counsel in: C-00-20905.

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ORDER DENYING HYNIX'S MOTION FOR JUDGMENT AS A MATTER OF LAW OR FOR A NEW TRIAL REGARDING THE WRITTEN DESCRIPTION REQUIREMENT — C-00-20905 RMW

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Dated: 1/27/2009

TSF

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